

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
24 December 2003 (24.12.2003)

PCT

(10) International Publication Number  
**WO 03/105753 A2**

(51) International Patent Classification<sup>7</sup>: **A61K**  
(21) International Application Number: **PCT/US03/15017**  
(22) International Filing Date: **12 May 2003 (12.05.2003)**  
(25) Filing Language: **English**  
(26) Publication Language: **English**  
(30) Priority Data:  
**10/170,387** **12 June 2002 (12.06.2002)** **US**  
(71) Applicant (for all designated States except US): **GENENCOR INTERNATIONAL, INC.** [US/US]; 925 Page Mill Road, Palo Alto, CA 94304 (US).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

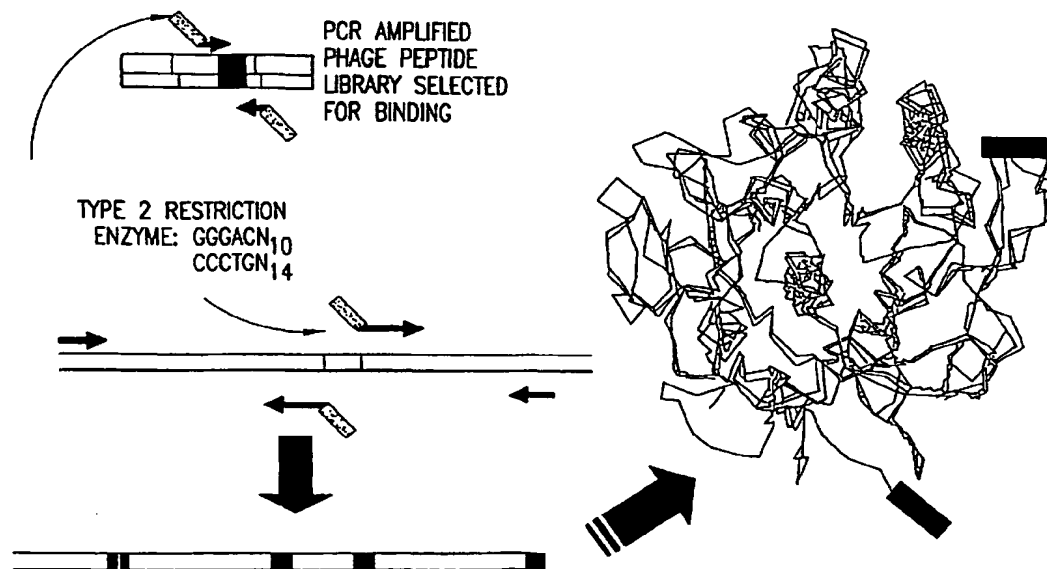
(72) Inventor; and  
(75) Inventor/Applicant (for US only): **MURRAY, Christopher, J.** [US/US]; 221 Coldbrook Lane, Soquel, CA 95073 (US).  
(74) Agent: **ANDERTON, JR., H., Thomas**; GENENCOR INTERNATIONAL, INC., 925 Page Mill Road, Palo Alto, CA 94304 (US).

**Published:**

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **METHODS AND COMPOSITIONS FOR GRAFTING FUNCTIONAL LOOPS INTO A PROTEIN**



(57) Abstract: The present invention provides targeted enzymes that bind to targets better than the corresponding pre-targeted enzymes bind the target under like conditions, methods of making targeted enzymes, methods of using targeted enzymes to treat diseases, and pharmaceutical compositions comprising targeted enzymes.

WO 03/105753 A2